

**SINGLE CRYSTAL GaN SUBSTRATE, METHOD OF GROWING SAME
AND METHOD OF PRODUCING SAME**

ABSTRACT OF THE DISCLOSURE

Seeds are implanted in a regular pattern upon an undersubstrate. A GaN crystal is
5 grown on the seed implanted undersubstrate by a facet growth method. The facet growth
makes facet pits above the seeds. The facets assemble dislocations to the pit bottoms from
neighboring regions and make closed defect accumulating regions (H) under the facet bottoms.
The closed defect accumulating regions (H) arrest dislocations permanently. Release of
dislocations, radial planar defect assemblies and linear defect assemblies are forbidden. The
10 surrounding accompanying low dislocation single crystal regions (Z) and extra low
dislocation single crystal regions (Y) are low dislocation density single crystals.